

**CRAB ORCHARD NATIONAL WILDLIFE REFUGE CERCLA PROJECT
MONTHLY PROGRESS REPORT
MAY 2018**

**ADDITIONAL AND UNCHARACTERIZED SITES
OPERABLE UNIT (AUS OU)**

1.0 Actions toward Achieving Compliance

Feasibility Study (FS).

The U.S. Fish and Wildlife Service (FWS) continues to provide technical direction to Shannon and Wilson Inc. (SWI) on the draft FS. The draft FS will incorporate the results of the natural attenuation study. The draft pilot FS included a comparative analysis of alternatives for AUS Sites 0001, 0002, 0060, and 0A2B. FWS and the Federal Facility Agreement Agencies (Agencies) participated in conference calls on May 7th and 30th to discuss the agency comments and concerns on the draft pilot FS and build consensus. Written responses were provided to a small subset of agency comments on May 11th and 14th. A master workbook matrix containing the agency comments and written responses for the draft pilot FS and Groundwater Risk Assessment was distributed to the agencies on May 21st. A Quick Status Sheet was provided to the Agencies regarding project updates of schedules and on-going activities. The draft FS is targeted for later in 2018.

Natural Attenuation in Groundwater

Review of the preliminary data for the volatile organic constituents and carbon isotope data support degradation occurred in several wells. SWI will be preparing a natural attenuation report. The results will be used to further inform alternative analysis in the FS.

Sewer Line Vapor Threat Evaluation of Area 11.

The findings suggest that the abandoned sewer line in Area 11 may function as a preferential pathway for contaminated groundwater migration leaving contaminated groundwater at the roadside manhole cover and vault location some distance from known plumes or there is a newly discovered disposal site with a plume at this manhole cover and vault location. The draft report is being finalized with these findings. The respondent has agreed to address the findings of the report in the draft full FS.

Area 8 Copper Site

The pond is contaminated with dissolved copper from buried waste in a dump along the shoreline and beneath the water. The concentrations of copper can exceed water quality criteria for the protection of aquatic life with sufficient water retention period, but not above human health standards. The pond in Area 8 South discharges surface water through a culvert and overflows a low spot of the road under heavy rain events or high water levels into the creek. Surface water samples are collected monthly and tested for dissolved copper at a location near the culvert that discharges into the creek and where it overflows the low spot of the road. The dissolved copper concentration of 12 ug/l in a surface water sample collected May exceeded the aquatic water quality criteria.

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Draft Evaluation of Future Groundwater Risk

The results of the evaluation indicated risks for human and ecological receptors and pathways related to potable and non-potable uses associated with the purposes of the Federal facility including conservation, recreation, industrial, and agricultural. FWS is revising the Groundwater Risk Assessment.

Site 0001

FWS is preparing a technical memo to report the results of the additional testing conducted to evaluate the significant elevated concentration of arsenic at Site 0001. The results will be used to further inform alternative analysis in the FS.

UXO Discovery

Several landmine casings were discovered along former railroad tracks and drainage area that intersect a stream channel west of Area 7. The object found in the stream bed that flows through the western part of Area 12 was identified as a lid for a propellant canister. FWS' contractor, SRS, removed an estimated forty empty landmine casings from along the former railroad tracks west of Area 7. A report is being prepared.

2.0 Status/Results of Sampling, Tests, and Other Data

- Preliminary results for groundwater samples collected for evaluation of natural attenuation the week of November 6, 2017 and January 1, 2018 were received January 17th and March 8th, respectively. The TCE cometabolism/ 14C samples were collected on March 21st, completing the field requirements for the NA Study. Preliminary gene results were received on April 23rd. Preliminary microorganism results were received on May 15th. The preliminary TCE cometabolism results are pending along with all validated data for all results.
- The results for dissolved copper and hardness parameters, calcium and magnesium, were received for the surface water sample collected May 22nd from Area 8 South Copper Pond. The dissolved copper concentration of 12 ug/L exceeded the water quality criteria for the protection of aquatic life (acute criteria 8.95 ug/L and chronic criteria of 6.34 ug/L).

3.0 Actions Scheduled for Next Month

- Continue to provide technical direction to S&W on preparation of the FS.
- Evaluate results of monitored natural attenuation bench study.
- Complete written responses to comments on small set of remaining Agency comments.
- Revise tech memos for the Groundwater Risk Assessment and Sewer Line Vapor Threat Evaluation of Area 11.
- Explore options for management or containment of surface water at Area 8 Copper Pond.
- Conduct surface water sampling at Area 8 Copper Pond.
- Participate in a meeting with USEPA on June 6th and an Agency conference call on June 20th to resolve Agency comments on the draft pilot FS.

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4.0 Modification or Delays Encountered or Anticipated

Completion of the draft FS will proceed per the AUS OU SOW and is targeted for later 2018. The draft FS will incorporate the results of the monitored natural attenuation bench study.

5.0 Other Significant Activities

None to report.

6.0 Personnel Changes

None to report.

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AREA 7 PESTICIDES SITE

1.0 Actions toward Achieving Compliance

The U.S. Fish and Wildlife Service (FWS) continues to provide technical direction to TRC on the implementation of the response action. The selected alternative consists of demolition of four warehouses, excavation of soils, off-site disposal of building materials and soils to a permitted landfill, and an option to include environmental covenants in the Land Use Control Plan. Sampling will be conducted as part of the Administrative Order on Consent to refine the boundaries of the response action. A Remedial Design/Remedial Action (RD/RA) Work Plan is being prepared and will be attached to a Consent Decree to define the scope of work for implementation of the response action. TRC provided an overview to the Agencies of the Draft RD/RA Work Plan and Draft Sampling and Analysis Plan (SAP), dated April 26th, via a conference call on May 7th. The SAP consists of a Field Sampling Plan and a Quality Assurance Project Plan (QAPP) Addendum. Comments were received from the USACE and USEPA on the draft RD/RA Work Plan and draft SAP on May 7th and May 29th, respectively. TRC began preparing written responses to Agency comments. FWS distributed a check list for the auditing process of the mobile lab to be used for RD soil sampling around the four warehouses and beyond.

2.0 Status/Results of Sampling, Tests, and Other Data

None to report.

3.0 Actions Scheduled for Next Month

- Continue coordination and planning for the RD/RA.
- Participate in a meeting/conference call with TRC and the Agencies to resolve Agency comments on the Draft RD/RA Work Plan and Draft SAP on June 6th.
- Review the revised RD/RA Work Plan and SAP.

4.0 Modification or Delays Encountered or Anticipated

None to report.

5.0 Other Significant Activities

A Special Notice Letter was issued to Great Lakes on May 31st to enter into formal negotiations for Great Lakes for response activities at the Site.

6.0 Personnel Changes

None to report.

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PCB OPERABLE UNIT

1.0 Actions toward Achieving Compliance

Plumes One and Three Operations and Maintenance

Operations and monitoring for the Plume One pump and treatment system continued. The carbon was changed out on May 22nd. The average flow through the system was 3.1 gallons per minute. No PCBs were detected in the effluent. On May 31st, the system shut down unexpectedly due to low pressure.

Plume Two Remedial Design

The consent decree amendment for the Plume Two interim remedy is under review by U.S. Department of Justice.

2.0 Status/Results of Sampling, Tests, and Other Data

The validated analytical results for groundwater samples collected for annual monitoring of Plumes One and Three in April 2018 are pending.

3.0 Actions Scheduled for Next Month

Plumes One and Three

- Troubleshooting and maintenance repairs will be completed to address low pressure issues at the pump and treatment system.
- Wastes generated during operation and maintenance activities will be shipped off site for disposal in June.
- The QAPP and O&M Plan are being updated to be consistent with the USEPA Uniform Federal Policy for QAPP and reflect changes in project organization due to shift in responsibilities from Schlumberger to USFWS.
- The Seventh Annual Monitoring Report (2018) is being prepared.

4.0 Modification or Delays Encountered or Anticipated

None to report.

5.0 Other Significant Activities

None to report.

6.0 Personnel Changes

None to report.